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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,417	06/05/2006	Fabien Lanteires	PSA0307692	5451
29980	7590	01/28/2009		
NICOLAS E. SECKEL Patent Attorney 1250 Connecticut Avenue, NW Suite 700 WASHINGTON, DC 20036			EXAMINER CHANG, CHING	
			ART UNIT 3748	PAPER NUMBER
			MAIL DATE 01/28/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,417

**Applicant(s)**

LANTEIRES, FABIEN

**Examiner**

CHING CHANG

**Art Unit**

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 5-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2 and 5-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/1/08 has been entered.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. ***Claims 1-2, 9-13, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Beuche et al. (WO '675).***

Beuche discloses a method for controlling the operation of a cylinder (See Fig. 1) of an internal-combustion engine, the cylinder being provided with a combustion

chamber (in ZY) which can be opened or closed at the intake and opened or closed at the exhaust, and at least one fuel injector (KE), in which method (See Fig. 2), during the same operating cycle of the cylinder, the following phases are carried out: an opening phase at the exhaust between an exhaust opening time (at AO) and an exhaust closing time (at AS); a first opening phase at the intake between a first intake opening time (AT EO1) after the exhaust opening time and a first intake closing time (at ES1); a second opening phase at the intake between a second intake opening time (at EO2) and a second intake closing time (at ES2); a fuel injection phase between an injection start time and an injection end time; and a combustion phase for the air/fuel mixture contained in the chamber, wherein the exhaust closing time is between the first intake opening time and the second intake opening time; wherein the first intake closing time precedes the second intake opening time; wherein the first intake closing time is after the exhaust closing time; wherein the phases are carried out during each operating cycle of the cylinder; an internal-combustion engine having at least one cylinder which is provided with a combustion chamber which can be opened or closed at the intake and opened or closed at the exhaust, and at least one fuel injector (KE), wherein the cylinder operates in accordance with a method according to claim 1; a motor vehicle comprising an internal-combustion engine according to claim 11; wherein the first intake closing time precedes the second intake opening time; wherein the amplitude of the opening at the intake is adjusted so that the amplitude of the opening during the first opening phase at the intake is different from the amplitude of the opening during the second opening phase at the intake (See line 27, Page 8 through line 9 , Page 9).

4. ***Claims 6-8, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuche et al. (as applied to claims 1-2 above) in view of Urushihara et al. (US Patent 6,386,177).***

Beuche discloses the invention, however, fails to disclose the injection start time being between the first intake opening time and the exhaust closing time.

The patent to Urushihara on the other hand, teaches that it is conventional in the engine art, to utilize a fuel injection starting time between an intake opening time and an exhaust closing time (See Fig. 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the fuel injection start timing between the intake opening time and the exhaust closing time as taught by Urushihara in the Beuche method, since the use thereof would provide a better fuel economy control method on the engine.

5. ***Claims 5, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beuche et al. (as applied to claims 1-2 above) in view of Urushihara et al. (US Patent 6,386,177).***

Beuche discloses the invention, however, fails to disclose the first intake closing time preceding the injection start time.

The patent to Urushihara on the other hand, teaches that it is conventional in the engine art, to have utilized an intake closing time preceding the injection start time (See Figs. 13-14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the fuel injection strategy by having the intake closing time precede the injection start time as taught by Urushihara in the Beuche method, since the use thereof would provide a better fuel economy control method on the engine.

6. ***Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beuche et al. (WO '675) in view of Urushihara et al. (US Patent 6,386,177).***

Beuche discloses a method for controlling the operation of a cylinder (See Fig. 1) of an internal-combustion engine, the cylinder being provided with a combustion chamber (in ZY) which can be opened or closed at the intake and opened or closed at the exhaust, and at least one fuel injector (KE), in which method (See Fig. 2), during the same operating cycle of the cylinder, the following phases are carried out: an opening phase at the exhaust between an exhaust opening time (at AO) and an exhaust closing time (at AS); a first opening phase at the intake between a first intake opening time (AT EO1) after the exhaust opening time and a first intake closing time (at ES1); a second opening phase at the intake between a second intake opening time (at EO2) and a second intake closing time (at ES2); a fuel injection phase between an injection start time and an injection end time; and a combustion phase for the air/fuel mixture contained in the chamber, wherein the exhaust closing time is between the first intake opening time and the second intake opening time;

Beuche discloses the invention as recited above, however, fails to disclose the first intake closing time preceding the injection start time.

The patent to Urushihara on the other hand, teaches that it is conventional in the engine art, to have utilized an intake closing time preceding the injection start time (See Figs. 13-14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the fuel injection strategy by having the intake closing time precede the injection start time as taught by Urushihara in the Beuche method, since the use thereof would provide a better fuel economy control method on the engine.

**7. *Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beuche et al. (WO '675) in view of Urushihara et al. (US Patent 6,386,177).***

Beuche discloses a method for controlling the operation of a cylinder (See Fig. 1) of an internal-combustion engine, the cylinder being provided with a combustion chamber (in ZY) which can be opened or closed at the intake and opened or closed at the exhaust, and at least one fuel injector (KE), in which method (See Fig. 2), during the same operating cycle of the cylinder, the following phases are carried out: an opening phase at the exhaust between an exhaust opening time (at AO) and an exhaust closing time (at AS); a first opening phase at the intake between a first intake opening time (AT EO1) after the exhaust opening time and a first intake closing time (at ES1); a second opening phase at the intake between a second intake opening time (at EO2) and a second intake closing time (at ES2); a fuel injection phase between an injection start time and an injection end time; and a combustion phase for the air/fuel mixture

contained in the chamber, wherein the exhaust closing time is between the first intake opening time and the second intake opening time;

Beuche discloses the invention as recited above, however, fails to disclose the injection start time being between the first intake opening time and the exhaust closing time.

The patent to Urushihara on the other hand, teaches that it is conventional in the engine art, to utilize a fuel injection starting time between an intake opening time and an exhaust closing time (See Fig. 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the fuel injection start timing between the intake opening time and the exhaust closing time as taught by Urushihara in the Beuche method, since the use thereof would provide a better fuel economy control method on the engine.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-2, 9-13, 15, 19-20 have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHING CHANG whose telephone number is (571)272-4857. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ching Chang/  
Primary Examiner, Art Unit 3748